Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] What is claimed is:

1. A method of manufacturing a spindle motor which has a stationary member, a rotating member and a hydrodynamic bearing, the hydrodynamic bearing having a gap formed between said stationary member and said rotating member and having lubricating oil retained in the gap for supporting said rotating member with respect to said stationary member in a rotatable manner, the method forming an oil repellent film for preventing said lubricating oil from flowing out, on a predetermined area adjacent to said hydrodynamic bearing, the predetermined area being located on at least one of said stationary member and said rotating member, comprising:
a step of supplying an oil repellent solution by a supplying portion onto a part of said predetermined area;
a step of applying an air current onto the part of said predetermined area to which said oil repellent solution is supplied so as to peel off an excess part of said oil repellent solution supplied to the part of said predetermined area; and
a step of making a relative movement of said predetermined area on which said oil repellent film is formed, the

relative movement being made with respect to the supplying portion by which said oil repellent solution is supplied.

[c2] 2. The method of manufacturing a spindle motor as claimed in claim 1, wherein said peeling step peels off an excess oil repellent solution before said oil repellent solution applied in accordance with said supplying step is diffused out of said predetermined area or solidified.

[c3] 3. The method of manufacturing a spindle motor as claimed in claim 2, wherein said supplying step supplies said oil repellent solution onto the part of said predetermined area by a supplying nozzle, and said supplying nozzle is opposed to at least the part of said predetermined area via a gap.

[c4] 4. The method of manufacturing a spindle motor as claimed in claim 2, wherein said relative movement is made by rotating a part or all of said spindle motor including said predetermined area.

[c5] 5. The method of manufacturing a spindle motor as claimed in claim 2, wherein said peeling step is executed by sucking said excess oil repellent solution by means of a suction apparatus executing a depressurizing suction.

[c6] 6. The method of manufacturing a spindle motor as

claimed in claim 5, wherein said relative movement is made by rotating a part or all of said spindle motor including said predetermined area.

[c7] 7. The method of manufacturing a spindle motor as claimed in claim 6, wherein said suction apparatus is provided with a suction port, an opening portion of said suction port is opposed in close vicinity to the part of said predetermined area onto which said oil repellent solution is supplied, and said excess oil repellent solution is peeled by applying a suction air current.

[c8] 8. The method of manufacturing a spindle motor as claimed in claim 7, wherein a recess portion is formed in said suction apparatus, a shape of at least a part of the recess portion corresponds to a shape of said predetermined area, and the opening portion of said suction port is open to said recess portion, and
wherein said peeling step sucks said excess oil repellent solution by opposing said recess portion to at least the part of said predetermined area via a small gap and applying the suction air current after said oil repellent solution is supplied onto the part of said predetermined area.

[c9] 9. The method of manufacturing a spindle motor as claimed in claim 8, wherein said predetermined area is

formed on an approximately cylindrical peripheral surface with respect to a motor rotational axis, and said recess portion has a recess peripheral surface whose shape corresponds to a part of said approximately cylindrical peripheral surface shape, and
wherein said approximately cylindrical peripheral surface and said recess peripheral surface are opposed to each other via an approximately fixed gap except an area around the opening portion of said suction port, at least in said applying air current step.

[c10] 10. The method of manufacturing a spindle motor as claimed in claim 6, wherein said suction apparatus includes a suction nozzle.

[c11] 11. The method of manufacturing a spindle motor as claimed in claim 3, further comprising;
a step of checking whether or not a leading end portion of said oil repellent solution supplying nozzle is closed, and
a step of removing a clogging from said leading portion .

[c12] 12. The method of manufacturing a spindle motor as claimed in claim 11, wherein said removing clogging step comprises a step of dipping the leading end portion of said supplying nozzle into a solvent so as to dissolve the oil repellent which solidifies on the leading end por-

tion, and a step of discharging said oil repellent solution from said supplying nozzle.

[c13] 13. A method of manufacturing a spindle motor which has a stationary member, a rotating member and a hydrodynamic bearing, the hydrodynamic bearing having a gap formed between said stationary member and said rotating member and having lubricating oil retained in the gap for supporting said rotating member with respect to said stationary member in a rotatable manner, the method forming an oil repellent film for preventing said lubricating oil from flowing out, on a predetermined area adjacent to said hydrodynamic bearing, the predetermined area being located on at least one of said stationary member and said rotating member, comprising;
a step of supplying an oil repellent solution by a supplying portion onto a part of said predetermined area;
a step of applying an air current onto the part of said predetermined area to which said oil repellent solution is supplied so as to peel off an excess part of said oil repellent solution supplied to the part of said predetermined area;
a step of making a relative movement of said predetermined area on which said oil repellent film is formed, the relative movement being made with respect to the supplying portion by which said oil repellent solution is sup-

plied;

a step of supplying a solvent for solving the excess part of said oil repellent solution, peeled off in said applying air current step; and

a step of removing said oil repellent solution dissolved by said solvent.

[c14] 14. The method of manufacturing a spindle motor as claimed in claim 13, wherein said applying air current step is executed by sucking an excess oil repellent solution.

[c15] 15. The method of manufacturing a spindle motor as claimed in claim 14, wherein said relative movement is made by rotating a part or all of said spindle motor including said predetermined area.

[c16] 16. The method of manufacturing a spindle motor as claimed in claim 14, wherein said removing step recovers said peeled oil repellent solution dissolved by said solvent in accordance with a suction.